

**Notice of References Cited**

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Examiner

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1635

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**U.S. PATENT DOCUMENTS**

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**FOREIGN PATENT DOCUMENTS**

*		DOCUMENT NO.	DATE	COUNTRY	NAME	CLASS	SUBCLASS	DOCUMENT SOURCE **	
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<input type="checkbox"/>	N	495 674 A2	Jul. 1992	EP	Purchio et al.	--	--	<input type="checkbox"/>	<input type="checkbox"/>
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**NON-PATENT DOCUMENTS**

*		DOCUMENT (Including Author, Title Date, Source, and Pertinent Pages)	DOCUMENT SOURCE **	
			APS	OTHER
<input type="checkbox"/>	U	Timothy P. O'Brien et al., Expression of <i>cyr61</i> , a Growth Factor-Inducible Immediate-Early Gene; MOLECULAR AND CELLULAR BIOLOGY, July 1990, p. 3569-3577	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	V	Branko V. Latinkic et al., Promoter function and structure of the growth factor-inducible immediate early gene <i>cyr61</i> ; Nucleic Acids Research, 1991, vol. 19, No. 12 pp. 3261-3267	<input type="checkbox"/>	<input type="checkbox"/>
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**GTPase superfamily** Group of guanine nucleotide-binding proteins that cycle between an inactive state with bound GDP and an active state with bound GTP. These proteins—including G proteins, Ras proteins, and certain polypeptide elongation factors—function as intracellular switch proteins.

**haploid** Referring to an organism or cell having only one member of each pair of homologous chromosomes and hence only one copy (allele) of each gene or genetic locus. Gametes and bacterial cells are haploid. See also diploid.

**heat-shock response** Increased expression of a specific group of genes (*hsp* genes) in response to elevated temperature or other stressful treatment accompanied by decreased transcription of other genes and decreased translation of other mRNAs. This response is very widespread among both prokaryotic and eukaryotic organisms and helps the organism survive the stress.

**HeLa cell** Line of human epithelial cells, derived from a human cervical carcinoma, that grows readily in culture and is widely used in research.

**helix** See  **$\alpha$  helix** and **double helix, DNA**.

**helix-loop-helix** A conserved protein dimerization motif characterizing one class of eukaryotic transcription factors. (See Figure 11-48g.)

**helix-turn-helix** A DNA binding motif found in most bacterial DNA binding proteins (See Figure 11-15).

**heterochromatin** Regions of chromatin that remain highly condensed and transcriptionally inactive during interphase.

**heteroduplex** A duplex DNA containing one or more mispaired bases.

**heterokaryon** Cell with more than one functional nucleus produced by the fusion of two or more different cells. See also **cell fusion**.

**heterozygote** Referring to a diploid cell or organism having two different alleles of a particular gene.

**hexose** A six-carbon monosaccharide.

**high-energy bond** Covalent bond that releases a large amount of energy when hydrolyzed under the usual intracellular conditions. Examples include the phosphoanhydride bonds in ATP, thioester bond in acetyl CoA, and various phosphate ester bonds. (See Table 2-9.)

**histones** A family of small, highly conserved basic proteins, found in the chromatin of all eukaryotic cells, that associate with DNA in the nucleosome. The five major types are H1, H2A, H2B, H3, and H4 histone. Histone-like proteins also are present in some prokaryotes.

**Holliday structure** Intermediate structure in DNA recombination where resolution can result in recombination and/or heteroduplex formation. (See Figures 10-28 and 10-30.)

**homeobox** Conserved protein sequence which forms a DNA-binding domain (homeodomain) in a class of transcription factors coded by certain homeotic genes. (See Figure 11-48a.)

**homeodomain** A conserved DNA-binding motif found in many developmentally important transcription factors. See **homeobox**.

**homeotic gene** A gene in which mutations cause cells in one region of the body to act as though they were located in another, giving rise to conversions of one cell, tissue, or body region into another. Most but not all, homeotic genes encode homeodomain-containing proteins.

**homologous chromosome** One of two copies of a particular chromosome in a diploid cell; also called *homologue*. Each is derived from a different parent.

**homology** Similarity in the sequence of a protein or nucleic acid or in the structure of an organ that reflects a common evolutionary origin. In contrast, analogy is a similarity in structure or function that does not reflect a common evolutionary origin.

**homozygote** Referring to a diploid cell or organism having two identical alleles of a particular gene.

**hormone** General term for any extracellular substance that induces specific responses in target cells. Hormones coordinate the growth, differentiation, and metabolic activities of various cells, tissues, and organs in multicellular organisms.

**host cell** A cell in which a virus or cloning vector can survive and replicate.

**humoral immunity** Immunity conferred by circulating antibodies produced by B lymphocytes and plasma cells. (See Figure 27-1.)

**hybridization** Association of two complementary nucleic acid strands to form double-stranded molecules. Hybrids can contain two DNA strands, two RNA strands, or one DNA and one RNA strand. *In situ hybridization* is a technique for determining the location of a specific RNA sequence within a tissue or cell by treatment with a labeled (e.g., radiolabeled) single-stranded nucleic acid probe followed by detection (e.g., autoradiography). *In situ hybridization* is also used to map the location of genes to specific chromosomal locations.

**hybridoma** A clone of hybrid cells, formed by fusion of normal B or T lymphocytes with myeloma cells, which are immortal and produce antibodies or T-cell receptors. Hybridomas commonly are used to produce monoclonal antibodies.

**hydrogen bond** A noncovalent association between an electronegative atom (commonly oxygen or nitrogen) and a hydrogen atom covalently bonded to another electronegative atom. Although relatively weak, hydrogen bonds are numerous in macromolecules; they are particularly important in stabilizing the three-dimensional structure of proteins and are responsible for formation of base pairs in nucleic acids.

**hydrolysis** Reaction in which a covalent bond is cleaved with addition of an H from water to one product of the cleavage and of an OH from water to the other.

**hydrophilic** Interacting effectively with water. See also **polar**.

**hydrophobic** Not interacting effectively with water; in general, poorly soluble or insoluble in water. See also **nonpolar**.

**hydrophobic interaction** The force that drives association of nonpolar molecules or parts of molecules with each other in aqueous solution. A type of noncovalent bond that is particularly important in stabilization of the phospholipid bilayer.

**hydroxyl group** (-OH) A hydrogen atom covalently bonded to an oxygen atom. A common substituent group in sugars and in the side group of several amino acids. Hydroxyl groups often participate in formation of intra- and intermolecular hydrogen bonds in biological molecules.

**hypertonic** A hypertonic solution is one having an osmotic strength greater than that of a cell ( $\approx 300$  mOsm). Such a solution causes water to move out of a cell due to osmosis.

**hypotonic** A hypotonic solution has an osmotic strength lower than that of a cell ( $\approx 300$  mOsm). Such a solution causes water to move into a cell due to osmosis.

**immortality** Property of a cell line that permits it to undergo an unlimited number of cell divisions.

**immune response** Variety of host defenses mediated by B and T lymphocytes, and other white blood cells that result in the lysis of microorganisms or foreign cells (cell-mediated immunity) and elimination of foreign molecules (antigens) by interaction with specific antibody (humoral immunity). See also **inflammation**. (See Figure 27-1.)